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Remarks

Claim 22 has been made dependent on claim 10, instead of claim 21, so that the term "iminometal" has antecedent basis.

In reviewing the claims, it has also been noted that, contrary to what is stated in the response of September 19, 2005, none of the formulae in Claim 23 corresponds with Scheme 13 on page 51. The chiral auxiliary depicted in Scheme 3 contains an additional methyl group.

Claims 31 and 32 have been amended by replacing the incorrect term "sulfinylamine" with the correct term "sulfinylimine", consistent with Claim 1 from which the two claims depend.

Withdrawn claims 33 to 45 have been cancelled. Applicants reserve the right to pursue these claims in a divisional application.

Claim Rejections:- 35 U.S.C. § 102(e)/103

Claims 1 to 30 stand rejected under 35 U.S.C. § 102(e)/103 as allegedly being anticipated or, in the alternative, obvious, in view of Senanayake et al., US 6,610,887.

It is respectfully submitted that all of the pending Claims, Claims 1 to 32, are patentable over Senanayake et al., US 6,610,887. The method claimed in the present invention is distinct from that described in Senanayake et al.

The present invention provides a general method of preparing amine stereoisomers. As described at page 3, lines 4 to 21 of the present specification, it is distinguished from known methods in that it starts from a sulfinylimine that bears on the sulfinyl group a residue of an alcohol, thiol or amine, rather than a hydrocarbyl group, such as p-tolyl or

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tert-butyl. In the embodiment of dependent Claim 4, the residue of an alcohol, thiol or amine is a residue of an optionally N-substituted beta-amino alcohol, thiol or amine.

As described at page 3, lines 16 to 19 of the present specification, it was known that sulfinylimine stereoisomers that bear on the sulfinyl group a residue of a hydrocarbyl group could be obtained by reacting a carbonyl compound, such as an aldehyde or ketone, with a sulfinamide stereoisomer, such as p-toluenesulfinamide or tert-butanesulfinamide. This is the method used in US 6,610,887 - see Columns 12 to 13, in particular Scheme 3 and Column 13, lines 36 to 51, and also the Example bridging Columns 16 and 17. (For the information of the Examiner, it is noted that at column 13, lines 43 to 51, the cited patent discloses that the starting sulfinamides of formula (V) can be prepared by methods disclosed in co-pending provisional application no. 60/283,337. Applicants' co-pending application serial number 10/120,541, cited in their Information Disclosure Statement, claims priority from this provisional application).

As described at page 7, line 4 to page 8, line 4, of the present specification, sulfinylimines that bear on the sulfinyl group a residue of an alcohol, thiol or amine may be prepared starting from an iminometal, such as an iminomagnesium chloride, instead of an aldehyde or ketone. In one embodiment, as defined in Claim 10, the sulfinylimine has been prepared by contacting an iminometal with a 1,2,3-oxathiazolidine-S-oxide, a 1,2,3-dithiazolidine-S-oxide or a 1,2,3-azathiazolidine-S-oxide, which itself may be prepared from an optionally N-substituted beta-amino alcohol, thiol or amine as defined in Claim 17. This is illustrated for an optionally N-substituted beta-amino alcohol by Schemes 3 and 4 on pages 32 and 34 of the specification. An advantage of the

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method of Claim 10 is that the final stage cleavage of the sulfur-nitrogen bond also affords an optionally N-substituted beta-amino alcohol, thiol or amine, which can be recycled as described at page 9, lines 14 to 19.

Accordingly, it is respectfully submitted that the presently claimed method, which starts from sulfinylimine that bears on the sulfinyl group a residue of an alcohol, thiol or amine, and especially that which starts from a sulfinylimine that bears on the sulfinyl group a residue of an optionally N-substituted beta-amino alcohol, thiol or amine, is novel and would not have been obvious to a person skilled in the art.

Finally, the Examiner has suggested that Claim 1 completely embraces the disclosure of Senanayake et al., US 6,610,887. It is respectfully submitted that this is not the case, due to the requirement in Claim 1 that the sulfinylimine bears on the sulfinyl group a residue of an alcohol, thiol or amine. Applicants acknowledge that the broadest definition of X in US 6,610,887 includes -NR₄R₅. However, the definitions of R₄ and R₅ allow for each to represent hydrogen, such that X is NH₂. NH₂ is a residue of ammonia, not of an amine, and hence the term "residue of an amine" in Claim 1 of the present application does not completely embrace the definition in US 6,610,887 of -NR₄R₅. Moreover, US 6,610,887 contemplates that the sulfinamide of formula (I) is prepared starting from an aldehyde of formula (4) and a sulfinamide of formula (V) - see column 9, lines 43 to 65.

Obviousness-Type Double Patenting

Claims 1 to 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1 to 11 of US 6,610,887.

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Applicants respectfully submit that the present claims are patentably distinct from the claims of US 6,610,887.

Although the claims in the present application and those of the cited patent both read on methods of preparing R-didesmethylsibutramine, the claimed methods represent patentably distinct inventions. A person skilled in the art, reading the claims of US 6,610,887, would not have contemplated the method of any of the claims of the present application.

Claim 1 of the present application is directed to a method that starts with a sulfinylimine that bears on the sulfinyl group a residue of an alcohol, thiol or amine. Claim 4 further specifies that the residue of an alcohol, thiol or amine is a residue of an optionally N-substituted beta-amino alcohol, thiol or amine. Claim 10, which depends from Claim 4, further specifies that the sulfinylimine has been prepared by contacting an iminometal with a 1,2,3-oxathiazolidine-S-oxide, a 1,2,3-dithiazolidine-S-oxide or a 1,2,3-azathiazolidine-S-oxide. Claim 17, which depends from Claim 10, further specifies that the 1,2,3-oxathiazolidine-S-oxide, a 1,2,3-dithiazolidine-S-oxide or a 1,2,3-azathiazolidine-S-oxide has been prepared by reacting an optionally N-substituted beta-amino alcohol, thiol or amine with thionyl chloride.

Claim 1 of US 6,610,887 is directed to a method that starts with a sulfinylamine, not a sulfinylimine, which sulfinylamine bears on the sulfinyl group a group X. The definition of the group X is different from that in Claim 1 of the present application. It does not read on a residue of an alcohol or a thiol at all, and insofar as it contemplates NR₄R₅, it is not the same concept as a residue of an amine.

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Dependent claims 9, 10 and 11 further define X as certain hydrocarbyl groups. It is clear from the claims as a whole, and the description, that the invention disclosed by US 6,610,887 is not the same invention as claimed in the present application. The invention claimed in US 6,610,887 is based on the concept of making an amine by reacting an aldehyde with a sulfonamide to form a sulfinylimine, then performing an addition reaction across the imine bond, and finally cleaving the sulfur-nitrogen bond to afford the amine. Reference is made in particular to Claims 13 to 15. It would not have been obvious to a person skilled in the art to modify the invention claimed in the claims of US 6,610,887 so as to arrive at any specific embodiment falling within the scope of any of the claims of the present application. The inventions of the two cases require the use of different starting materials and different sulfur-containing reagents.

Conclusion

Applicants have amended the dependency of claim 22, corrected terms in Claims 31 and 32, and cancelled non-elected Claims 33 to 45.

In response to novelty/obviousness and obviousness-type double patenting rejections based upon US 6,610,887, Applicants have explained how the presently claimed invention is distinguished. It is respectfully submitted that the application is in order to receive a notice of allowance.

Communication by Telephone

The undersigned's office is located in the United Kingdom, and hence the Examiner may have difficulty contacting him from the USPTO by telephone. If the Examiner wishes to

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speak with the undersigned by telephone, he can contact the
undersigned by e-mail at martinahay@martin-a-hay.com.

Respectfully submitted,



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